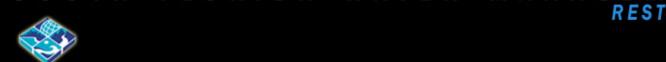
SOUTH FLORIDA WATER MANAGEMENT DISTRICT RESTORING THE EVERGLADES



# Stormwater Treatment Area 3/4 Report

WRAC Lake Okeechobee Committee June 23, 2006

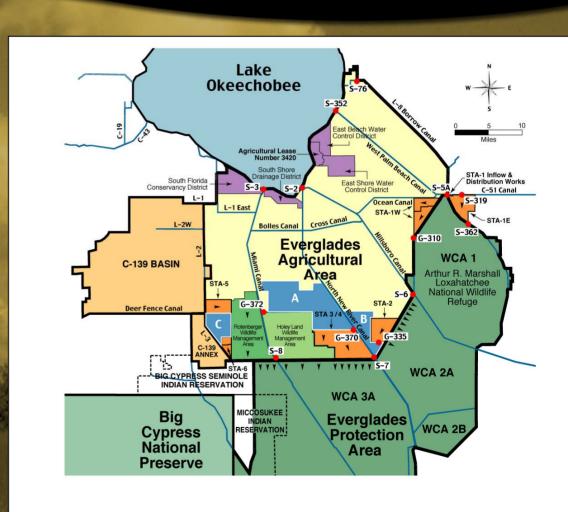
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sfwmd.gov



#### **Everglades Construction Project**

- Required by 1994
   Everglades Forever Act and Everglades
   Settlement Agreement
- Coupled with BMPs, ECP intended to reduce long-term flow-weighted mean phosphorus concentration in discharges to interim goal of 50 ppb
- 2003 Amended EFA required ECP enhancements designed to achieve the 10 ppb phosphorus criterion in the Everglades





#### **Everglades Construction Project**

- All 6 STAs now in flow-through operations
- Over 40,000 acres of constructed wetlands
- Major enhancements underway over past three years in all 6 STAs
- STA expansions will add about 18,000 acres
  - Further assist in maximizing the effectiveness of the existing STAs in improving water quality entering the EPA
  - Initial expansions to be flow-capable by 12/2006
  - Compartment B and C build-outs to follow



## SOUTH FLORIDA WATER MANAGEMENT DISTRICT RESTORING THE EVERGLADES



**STA-3/4** 



- 16,530 acres of effective treatment area
- Long-Term Plan enhancements are underway
- Cell 3 internal levee and structures complete; re-flooding underway for vegetation grow-in
- PSTA demonstration project in Cell 2B complete and operational





## STA-3/4 Original Design Assumptions

- Target STA-3/4 outflow concentration 50 ppb
- Based on EAA flows and phosphorus loads for 1979-1988
  - Adjusted for reductions due to BMPs and conversion to STAs
- Total STA-3/4 average annual inflow volume 600,000 ac-feet
  - Average annual 347,000 ac-feet from basin runoff
    - EAA (S-7/S-2 and S-8/S-3)
    - C-139
    - South Florida Conservancy District
    - South Shore Drainage District



## STA-3/4 Original Design Assumptions

#### **Continued:**

- Average annual 16,000 ac-feet of historic Lake Okeechobee regulatory releases thru S-7, S-8 and S-150
- Average annual 236,000 ac-feet "allowance for additional Lake Okeechobee releases as water supply for the Everglades"
  - Lake Okeechobee releases assumed phosphorus concentration 70 ppb





#### STA-3/4 Inflows - Current Assumptions

#### 2003 Amended EFA and the Long-Term Plan

- Target STA outflow concentration lowered substantially to achieve phosphorus criterion of 10 ppb in the Everglades Protection Area
- Included updated projected STA-3/4 inflow volumes and loads
- Predicated on Adaptive Implementation
  - Recognized need to continually update the STA inflow data sets as new information becomes available



## STA-3/4 Inflows - Current Assumptions

EAA Regional Feasibility Study conducted in 2005 to optimize STAs with 18,000-acre expansion

- Included updated STA-3/4 inflow volumes and loads
- Used flows from SFWMM simulation (36-yr period 1965-2000)
  - No assumed reduction in flows due to BMPs
- Water quality data from Water Years 1995-2004
- Total average annual inflow volume 600,000 acfeet
  - 459,000 ac-feet of basin runoff
  - 139,000 ac-feet allowance for Lake Okeechobee releases (70 ppb)





#### STA-3/4 Inflows - Current Assumptions

#### **Continued:**

Lake Okeechobee Regulation Schedule Study underway

- Assumes Lake Okeechobee releases phosphorus concentration of 146 ppb
  - Based on recent concentration data (WY04, WY05 and partial WY06)
  - Assumed representative of concentrations that may exist during implementation time-frame of the new interim regulation schedule (2007-2010)





## STA-3/4 Inflows - Current Assumptions

#### **Continued:**

- Corresponding Lake Okeechobee regulatory release volume limited to average annual 63,000 ac-feet
  - higher volumes and associated loads would potentially impact STA-3/4 performance and compliance with phosphorus criterion of 10 ppb in the Everglades Protection Area



